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FORSYTH ENGINEERING, INC.

1925 Park Avenue
St. Louis, MO 63104
(314) 621-7380

Entact Granite City
2245 Adams Street
Granite City, Illinois 62040

September 16, 1998

Attention: Mr. Tim Healy

Re: Inspection Report
1423 22nd Street
2204-2206 State Street
2246 Delmar Avenue
Granite City, Illinois
Forsyth Project #98-62

Dear Mr. Healy:

At your request, on September 9, 1998 the writer made visual observations of shallow excavation and backfill work being performed by Entact in Granite City Illinois and then made visual inspections of residential properties at which similar excavation and backfill activities had been completed. Properties inspected were located at 1423 22nd Street, 2204-2206 State Street and 2246 Delmar Avenue. The purpose of the inspections was to determine the possible relation of excavation and backfill work to reported wet basement conditions at the three properties. This report contains the findings of the inspections.

General observation of excavation work: Entact is performing environmental remediation work in a portion of the city of Granite City, Illinois, through excavation and removal of contaminated soils and clean backfilling in residential yards. A site reported to be typical of ongoing excavation work was observed by the writer at 2229 Edison Avenue. The entire front, rear and side yards around the single-family residence had been excavated to a depth of approximately six to eight inches. The exposed subgrade had been lightly watered to control dust. The subgrade was a dark-colored, uniform, fine-grained material which appeared to be a silt or sand-silt mix. It was reported to be typical of subgrade materials at other remediated properties. The nature of the excavation does not elicit any significant structural concerns for adjacent building construction.

A site currently undergoing excavation of the front and side yards was observed by the writer at 2216 State Street. Excavation work was being performed with a rubber-tracked mini-excavator, which shoveled material from the yard into an on-site stockpile. A skid-steer loader was also on the site. This

reportedly is used to outload the excavated material from the stockpile to a truck. In the narrow side yard laborers with shovels were excavating material. Reportedly such hand excavation work is typically used immediately adjacent to foundations and other structures and in confined spaces. The mini-excavator collects and stockpiles the hand-excavated materials.

Reportedly excavation activities are followed by backfill of the excavated areas with clean earth fill and sodding or other restoration of surfaces. Reportedly the excavation of a typical residential yard is accomplished in less than one full work day. Excavated sites may remain open from a day or two, to as long as a week before backfill and restoration are completed.

In general, nothing was observed in the typical excavation work which might reasonably be expected to lead to foundation problems including water penetration of basements. Excavation depths are minimal, care is taken in the removal of materials from immediately adjacent to foundations, and no modifications to existing below-grade construction are made. As some excavations reportedly remain open for several days before backfilling, ponding of rainwater in the excavation and consequent temporary leaking of basement walls which had previously been dry is conceivable. Ordinarily such a temporary condition would not lead to persistent leaking of previously watertight construction.

The neighborhood undergoing remediation is characteristically uniform in grade and has little natural drainage. It is located in the American Bottoms flood plain of the Mississippi River. The site is approximately 1-1/2 miles from the Chain of Rocks Canal and about two miles from Horseshoe Lake. The area is typically subject to seasonal groundwater fluctuations. Backfilling around a building could worsen naturally poor drainage if grading was improperly done so as to direct surface water flow toward rather than away from the building. No such reverse grading was observed at the properties specifically inspected for water damage. It was noted, however, that relatively poor natural drainage of residential yards is an area-wide problem.

#1423 22nd Street is a two-story plus basement masonry single-family residential building with a gabled roof. The age of the building appeared to be approximately eighty to one hundred years. The basement of the building is located at about three feet below the surrounding exterior grade. Basement walls are constructed of "economy" or "engineer" brick. The continuous footing appears also to be constructed of brick. There is a concrete slab-on-grade floor.

Basement walls are generally in poor condition. There is loose and missing mortar at many locations on both interior and exterior faces. There are old water stains on the inside face of the brick, particularly under a window on the north wall. (The street grid in the neighborhood runs northeast to southwest and northwest to southeast. For simplicity this report refers to ``true'' northeast as north, southwest as south, etcetera). There is also minor rot in wood materials fastened to the wall.

The yard adjacent to the building on the north and east sides is very narrow and would have needed to be excavated entirely by hand. Drainage of the yard is poor and a roof drain discharges on grade adjacent to the north wall. On the day of the inspection the yard to the north of the building was wet due to watering in the back yard of the adjacent property.

Wet conditions in this basement appear most likely to be due to ground water penetration exacerbated by porous basement wall construction, old age and poor drainage of adjacent areas.

#2204-2206 State Street is a two-story plus basement frame two-family residential building with a gabled roof. The age of the building appeared to be approximately seventy to eighty years. The basement of the building is located at about three-and-one-half feet below the surrounding exterior grade. Basement walls are constructed of cast-in place concrete. There is a concrete slab-on-grade floor.

The basement is partially finished and very little of the below-grade wall could be observed from the interior. There were minor water stains on gypsum wallboard materials along the base of the south wall and minor water stains on the floor, leading down to a floor drain. Otherwise there was no indication of recent water penetration into the basement and construction appears generally to have been well maintained.

There were no obvious cracks on the exterior of the foundation wall. Along the south wall there is a small sodded yard and an area of crushed stone surfacing. There is also a concrete pad which supports an air-conditioning condenser unit. The pad tilts slightly toward the building and there is evidence of slight ponding of water against the building on the pad. A downspout at the southeast corner of the building conducts roof runoff below grade. A downspout at the southwest corner conducts water above grade onto adjacent property.

Local surface drainage of the yard around the building is naturally poor. It is possible that the area of crushed stone

backfill, marginally more porous than the adjacent earth backfill, allows surface runoff to collect in a shallow basin adjacent to the building and this may be the source of leakage. The deflected condenser pad may be directing additional water in this general direction.

#2246 Delmar Avenue is a two-story plus basement frame single-family residential building with a gabled roof. The age of the building appeared to be approximately eighty to one hundred years. The basement of the building is located at about three feet below the surrounding exterior grade. Basement walls are constructed of mortared rubble stone. There is a concrete slab-on-grade floor.

Basement walls are generally in poor condition and there was considerable dampness on walls and floor. There is loose and missing mortar in the walls and several locations of apparent recurrent water penetration through walls below grade. A leaking condensate drain on the air-conditioning equipment ponded water on the floor. There was minor rot of wood material attached to the walls and rust on metal surfaces in contact with walls and floor.

On the north side of the building the lack of a gutter allows heavy runoff to drop from a valley condition onto the grade below, trapping water against the building. Although this building has exterior surface drainage which is somewhat better than other properties in the neighborhood, at least on the north side, the advantage is being lost as runoff from the roof causes erosion in the corner of the house. The erosion has resulted in heavy mud splatters on the walls at this location.

Wet conditions in this basement appear to most likely be due to ground water penetration exacerbated by porous basement wall construction, old age and poor maintenance of interior and exterior construction.

It has been our pleasure to assist Entact with the evaluation of these property. If we can be of any further assistance or answer any questions concerning the contents of this report, please do not hesitate to telephone the writer at (314)621-7300.

Very truly yours,

FORSYTH ENGINEERING, INC.

William F. Forsyth, S.E.
President